COS 597D:
Principles of
Database and Information Systems

Final Remarks

Where we have been

- Models and Queries
  - Relational
    - expressiveness
    - formal foundations
  - XML
    - flexibility
  - key => column values stores
    - features for analysis of huge information collections

Where we have been

- Storing and Retrieving
  - File organization and indexing on disk
  - Distributed storage organization
  - Relational query evaluation and optimization
  - Distributed information processing
    - MapReduce
  - Incremental processing

Where we have been

- Maintaining
  - Correctness
    - Managing concurrency
      - locking
    - Managing distributed stores
      - consistency across copies
      - communication
  - Durability
    - Managing failure
      - logging
    - Managing partitioning
      - communication

What we have missed

- Security
  - Access
  - privacy
  - views
- Even more models for organizing data
  - general
  - specialized
- New computational tasks
  - application driven

A "models and methods" course

- Understand what going on
  => Make better choices in design and use of database systems
- Apply methods in other contexts
  - research requires solve problem with similar characteristics?
  - use techniques
- Current developments in field